

LOW COST MULTIPLE PATTERN ANTENNA
FOR USE WITH MULTIPLE RECEIVER SYSTEMS

ABSTRACT OF THE DISCLOSURE

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An antenna assembly includes at least two active or main radiating omnidirectional antenna elements arranged with at least one beam control or passive antenna element used as a reflector. The beam control antenna element(s) may have multiple reactance elements that can electrically terminate it to adjust the input or output beam pattern(s) produced by the combination of the active antenna elements and the beam control antenna element(s). More specifically, the beam control antenna element(s) may be coupled to different terminating reactances to change beam characteristics, such as the directivity and angular beamwidth. Processing may be employed to select which terminating reactance to use. Consequently, the radiator pattern of the antenna can be more easily directed towards a specific target receiver/transmitter, reduce signal-to-noise interference levels, and/or increase gain by using Radio Frequency (RF), Intermediate Frequency (IF), or baseband processing. A Multiple-Input, Multiple-Output (MIMO) processing technique may be employed to operate the antenna assembly with simultaneous beam patterns.

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